

WHAT IS CLAIMED IS:

1. An alternator mounted to an engine in a vehicle, comprising:
 - a rotor rotatable about a rotation shaft;
 - a stator provided on an outer periphery of the rotor;
 - a frame holding the rotation shaft of the rotor and the stator;
 - an alternator pulley connected to a first end of the rotation shaft on an outside of the frame;
 - an electrical component provided adjacent to a second end of the rotation shaft on the outside of the frame; and
 - a protection cover disposed to surround the electrical component, wherein the rotation shaft is arranged such that the second end is higher than the first end so that the pulley faces downward.
2. The alternator according to claim 1, further comprising a top cover, wherein the protection cover forms air intake openings through which air is introduced toward the electrical component, and the top cover is arranged above the air intake openings of the protection cover.
3. The alternator according to claim 1, wherein the electrical component includes a brush device.
4. The alternator according to claim 3, wherein the frame forms a recess portion on its axial end wall that lays in a substantially horizontal direction under the electrical component, and the recess portion extends in a radial direction.

5. The alternator according to claim 1, wherein the rotation shaft is vertically arranged.

6. The alternator according to claim 5, wherein the engine has a crank shaft that is vertically arranged and a crank shaft pulley that is connected to a lower end of the crank shaft, and the alternator pulley and the crank shaft pulley are arranged parallel to each other at a substantially same level.